

IN THE CLAIMS:

Please amend the claims as follows:

1-4. (Canceled)

5. (Currently Amended) A method of providing automated assistance in configuring customer premises equipment for communication with service provider network element, comprising:

automatically identifying a first valid protocol, a first valid channel, a second valid protocol, and a second valid protocol for configuration with the customer premises equipment without a user intervention; and

assisting the user in configuring the customer premises equipment for use with the identified valid protocols;

wherein automatically identifying the valid protocols for configuration with the customer premises equipment comprises:

communicating toward a first service provider network element a first probing configuration signal;

receiving a response to the first signal;

identifying the first valid protocol and first valid channel via the response from the first signal;

communicating toward a second service provider network element a second probing configuration signal;

receiving a response to the second signal;

identifying the second valid protocol and second valid channel via the response from the second signal,

wherein the first and second valid protocols are different protocols, and

wherein the CPE is configured with the first valid protocol, the first valid channel, the second valid protocol, and the second valid channel,

wherein communicating the probing configuration signal comprises communicating the probing configuration signal over a plurality of virtual channels, each virtual channel being a logical signal connection,

wherein communicating the probing configuration signal comprises communicating a plurality of probing configuration signals approximately simultaneously.

wherein communicating a plurality of probing configuration signals approximately simultaneously comprises:

spawning a plurality of threads, each thread operable to process signals associated with a virtual channel;

communicating a probing configuration signal over a plurality of virtual channels;  
and

monitoring the probing configuration signal associated with each virtual channel using a separate thread.

6. (Previously Presented) The method of Claim 5, wherein one of the probing configuration signals comprises an F5 Operations, Administration, and Maintenance loopback signal.

7. (Previously Presented) The method of Claim 5, wherein one of the probing configuration signals comprises a signal having a self configuring protocol.

8. (Previously Presented) The method of Claim 7, wherein one of the probing configuration signals comprises a Dynamic Host Configuration Protocol request, a Link Control Protocol Configuration Packet, or a Point-to-Point Over Ethernet (PPOE) PADI packet.

9. (Previously Presented) The method of Claim 8, wherein one of the valid protocols comprises an Internet over ATM protocol.

10. (Previously Presented) The method of Claim 8, wherein one of the valid protocols comprises a Point-to-Point over Asynchronous Transfer Mode protocol or a Point-to-Point over Ethernet protocol.

11-30. (Canceled)

31. (Currently Amended) A computer readable medium operable to execute the following steps on a processor of a computer:

automatically identifying a first valid protocol, a first valid channel, a second valid protocol, and a second valid protocol for configuration with the customer premises equipment without a user intervention; and

assisting the user in configuring the customer premises equipment for use with the identified valid protocols;

wherein automatically identifying the valid protocols for configuration with the customer premises equipment comprises:

communicating toward a first service provider network element a first probing configuration signal;

receiving a response to the first signal;

identifying the first valid protocol and first valid channel via the response from the first signal;

communicating toward a second service provider network element a second probing configuration signal;

receiving a response to the second signal;

identifying the second valid protocol and second valid channel via the response from the second signal,

wherein the first and second valid protocols are different protocols, and

wherein the CPE is configured with the first valid protocol, the first valid channel, the second valid protocol, and the second valid channel,

wherein communicating the probing configuration signal comprises communicating the probing configuration signal over a plurality of virtual channels, each virtual channel being a logical signal connection,

wherein communicating the probing configuration signal comprises communicating a plurality of probing configuration signals approximately simultaneously,

wherein communicating a plurality of probing configuration signals approximately simultaneously comprises:

spawning a plurality of threads, each thread operable to process signals associated with a virtual channel;

communicating a probing configuration signal over a plurality of virtual channels;  
and

monitoring the probing configuration signal associated with each virtual channel using a separate thread.

~~automatically identifying a plurality of valid virtual channels and a valid protocol for configuration with the customer premises equipment by~~

~~communicating over a plurality of virtual channels and toward a service provider network element a probing configuration signal, each of the plurality of virtual channels being a logical signal connection;~~

~~receiving over the valid virtual channel a response to the configuration signal, the valid virtual channel being a logical signal connection;~~

~~identifying a protocol via the response of the valid virtual channel;~~

~~configuring the customer premises equipment with the valid virtual channels and the valid protocol.~~

32. (Original) The computer readable medium of Claim 31, wherein the probing configuration signal comprises an F5 Operations, Administration, and Maintenance loopback signal.

33. (Original) The computer readable medium of Claim 31, wherein the probing configuration signal comprises a signal having a self configuring protocol.

34. (Canceled)

35. (Original) The computer readable medium of Claim 31, wherein communicating the probing configuration signal over a plurality of virtual channels comprises communicating the signal over plurality of virtual channels likely to return a response.

36. (Original) The computer readable medium of Claim 31, wherein communicating the probing configuration signal comprises:

communicating the signal over a first virtual channel; and

communicating the signal over a second virtual channel before a time out value associated with the signal communicated over the first virtual channels expires.

37. (Original) The computer readable medium of Claim 31, wherein communicating the probing configuration signal comprises:

communicating a first probing communication signal over a virtual channel; and

communicating a second probing configuration signal over the same virtual channel before a time out value associated with the first probing configuration signal expires.

38. (Original) The computer readable medium of Claim 31, wherein communicating the probing configuration signal comprises communicating over a virtual channel a plurality of probing configuration signals, each signal associated with a different protocol.

39.-82. (Canceled)

83. (Previously Presented) The method of Claim 5, wherein a predefined look-up table is not read order to identify the first and second valid protocols.

84. (Previously Presented) The method of Claim 31, wherein a predefined look-up table is not read in order to order identify the valid protocol.

85. (canceled)

86. (Currently Amended) The method of Claim ~~85~~31, wherein user intervention is a responding to a prompt of a Graphical User Interface.

87. (previously presented) The method of Claim 5, wherein user intervention is a responding to a prompt of a Graphical User Interface.

88. (Canceled)

89. (Canceled)